TECHNICAL STANDARDS

TITLE : SAFETY ASPECTS RELATING TO STATIC, PORTABLE COMPACTORS & ASSOCIATED EQUIPMENT

1.0 IN ACCORDANCE WITH THE EC MACHINERY DIRECTIVE 2006/42/EC ALL COMPACTION EQUIPMENT MUST HAVE HOPPERS, CHUTES AND GUARDS, etc. THAT FULLY COMPLY WITH THE RELEVANT REQUIREMENTS OF THE DIRECTIVE. THE COMPACTION EQUIPMENT WILL BE SUPPLIED WITH A DECLARATION OF CONFORMITY AND WILL HAVE THE 'CE' MARK AFFIXED. ALTERNATIVELY, IF IT IS INCOMPLETE OR IS TO FORM PART OF AN OVERALL SYSTEM, IT WILL BE SUPPLIED WITH A DECLARATION OF INCORPORATION.

1.1 TO FULFLL THE ABOVE REQUIREMENTS AND ACHIEVE THE HIGH STANDARD OF ELECTRICAL SAFETY REQUIRED BY THE HEALTH AND SAFETY EXECUTIVE AND DESCRIBED IN BS EN 60204 PART 1, THE FOLLOWING SPECIFICATION, WHICH COVERS THE BASIC PRINCIPLES OF ELECTRICAL INTERLOCKING, HAS BEEN ESTABLISHED.

1.2 AN APPROVED SAFETY SWITCH ARRANGEMENT MUST BE FITTED TO ALL MOVEABLE GUARDS, SUCH AS HOPPER COVERS, HINGED SIDE FLAPS AND ACCESS DOORS/GATES etc. THE LEVEL OF PROTECTION TO BE DICTATED BY THE RISK ASSESSMENT.

1.3 THE CONTROL AND SAFETY CIRCUITS MUST CONFORM TO BE EN 60204 AND THE MACHINERY DIRECTIVE WITH REGARD TO MONITORING OF EMERGENCY STOPS, SAFETY CIRCUITS AND MOTOR CONTACTORS.

1.4 IT IS RECOGNISED THAT, WHEREAS THE ABOVE REQUIREMENTS CAN BE APPLIED TO SMALLER STATIC COMPACTORS AND PORTABLE COMPACTORS IN GENERAL, AND THEIR INSTALLATIONS, THE SAFETY ASPECTS INVOLVING TRAVERSING COMPACTORS AND LARGER TRANSFER STATION COMPACTORS, AND INDEED THE TRAVERSING SITES AND TRANSFER STATIONS THEMSELVES, IS SOMEWHAT MORE DIFFICULT AND USUALLY SAFETY MEASURES HAVE TO BE TAILORED TO EACH INDIVIDUAL INSTALLATION. IT IS, HOWEVER, ESSENTIAL THAT, IN THE DESIGN OF THESE STATIONS/SITES, ALL SAFETY REQUIREMENTS MUST BE ADHERED TO.

1.5 IN ADDITION TO THE AFOREMENTIONED ELECTRICAL INTERLOCKING OF THE COMPACTION EQUIPMENT, THERE ARE VARIOUS OTHER ACCESS POINTS TO THE MACHINES AND THEIR ACCESSORIES WHICH CONSTITUTE A RISK.
THE FOLLOWING COMMENTS AND RECOMMENDATIONS ARE BASED ON THE REQUIREMENTS OF THE MACHINERY DIRECTIVE 2006/42/EC AND BS EN ISO 13857:2008.

2.0 STATIC COMPACTORS

2.1 STANDARD OPEN HOPPER SIDE OR END LOADING, SEE FIGURE 1

THE HEIGHT OF THE HOPPER LOADING LID MUST CONFORM TO THE HEIGHT AND REACH DIMENSIONS SET OUT IN BS EN ISO 13857:2008.
A REASONABLY STEEP ANGLED HOPPER LIP IS DISTINCTLY ADVANTAGEOUS INSOFAR AS IT INCREASES THE 'REACH DISTANCE' FACTOR.

2.2 HOPPER LIDS AND SAFETY TRIP/PUSH BARS, SEE FIGURE 2.

WHEN A LID IS FITTED, IT SHOULD BE LIFT ASSISTED FOR EASE OF OPERATION AND MUST OPERATE A SUITABLE AND APPROVED SAFETY SWITCH TO STOP THE MACHINE IMMEDIATELY WHEN OPENED. HOPPER LIDS SHOULD BE OF SUITABLY ROBUST CONSTRUCTION. IF SHEETED IN MESH, A MAXIMUM MESH OPENING SIZE OF 50mm SQUARE IS RECOMMENDED. AN ENCLOSED HOPPER WITH A SAFETY SWITCHED LOADING DOOR IS A SUITABLE ALTERNATIVE TO A HOPPER LID.

2.3 REAR LOADING HOPPER, SEE FIGURE 3.

AS MANY COMPACTORS ARE LOADED FROM THE REAR DECK OF THE COMPACTOR, A REARLOADING HOPPER IS NORMALLY FITTED, WITH OR WITHOUT A SAFETY LID/HINGED DOOR. WITH THIS TYPE OF HOPPER THERE IS A POTENTIAL HAZARD INSOFAR AS AN OPERATOR CAN FALL INTO THE HOPPER UNLESS THE HOPPER LOADING LIP IS OF SUFFICIENT HEIGHT (1100mm MINIMUM) TO PREVENT THIS OCCURENCE – REFER TO BS EN ISO 13857:2008.
HAND RAILS AND TOE GUARDS SHOULD ALSO BE PROVIDED THAT COMPLY WITH EN ISO 14122-3:2001+A1:2010.

2.4 SIDE OR REAR BIN LOADING DEVICES (STATIC COMPACTORS), SEE FIGURE 4.

ON COMPACTORS WHERE THESE BIN/CART LIFTING DEVICES ARE FITTED, ADEQUATE GUARDING MUST BE PROVIDED.
THIS WOULD TAKE THE FORM OF A MESH OR SHEET STEEL SAFETY ENCLOSURE (WITH OR WITHOUT A ROOF) WITH A SAFETY SWITCHED ELECTRICALLY INTERLOCKED GATE FOR ACCESS.
BIN LOADERS FOR THE WHEELED CART RANGE UP TO 1280 LITRES SHOULD BE RATED TO HAVE A MAXIMUM LIFTING CAPACITY OF 500kg (INCLUDING THE WEIGHT OF THE CART) AS STANDARD.

2.5 FEED CHUTE (SIDE OR REAR), SEE FIGURE 5.

LOADING CHUTES SHOULD HAVE A LOADING LIP A MINIMUM OF 1100mm FROM FLOOR LEVEL AND PREFERABLY FITTED WITH A SAFETY SWITCHED ELECTRICALLY INTERLOCKED DOOR.
ACCESS DOORS OR PANELS TO THE HOPPER SHOULD BE FITTED WITH AN APPROVED SAFETY SWITCH.

3.0 PORTABLE COMPACTORS

3.1 BIN LOADING DEVICES (HOOK LIFT PORTABLE COMPACTORS), SEE FIGURE 6.

ON COMPACTORS WHERE THESE BIN/CART LIFTING DEVICES ARE FITTED, SIDE GUARDING SHOULD BE FITTED AS STANDARD WITH SAFETY SWITCHES (AS A MINIMUM).
THIS WOULD TAKE THE FORM OF MOVEABLE GUARDS (HINGED, SLIDING OR PIVOT) THAT CAN BE SAFELY STOWED FOR TRANSPORT.

LOADERS SHOULD BE MANUAL IN OPERATION AND NOT HAVE AN AUTOMATIC CYCLE, UNLESS THE LOADER IS PROTECTED BY SAFETY FENCING/GUARDING ON ALL SIDES WITH A SAFETY SWITCHED ELECTRICALLY INTERLOCKED GATE FOR ACCESS.

3.2 BIN LOADING DEVICES (SKIP LIFT PORTABLE COMPACTORS).

IT IS ACCEPTED THAT THE FITTING OF PERMANENT STOWABLE GUARDS ON SKIP LIFT PORTABLE COMPACTION EQUIPMENT IS EXTREMELY DIFFICULT DUE TO SPACE LIMITATIONS (WIDTH) AND POSITION OF LIFTING LUGS. FIXED OR REMOVEABLE INTERLOCKED GUARDING IS RECOMMENDED, HOWEVER, IF THIS CANNOT BE UTILISED IT IS ACCEPTABLE TO OPERATE THE BIN LIFT IF THE FOLLOWING CONDITIONS ARE MET:

- A HOLD-TO-RUN OR TWO-HAND CONTROL DEVICE IS PROVIDED;
- THE CONTROL POSITION IS AT A SAFE DISTANCE (REF: EN ISO 13857:2008 OR EN ISO 13855:2010;
- GOOD VISIBILITY OF THE DANGER ZONES DURING THE WHOLE TRAVEL OF THE BIN LIFT (I.E. BIN LIFT MECHANISM, CONTAINER BEING LIFTED, THE OPPOSITE SIDE OF THE BIN AND THE SURROUNDING AREAS) AT THE CONTROL POSITION IS ENSURED;
- THE PERIPHERAL SPEED OF THE LIFTING DEVICE DOES NOT EXCEED 0.5 M/S;
- A VISIBLE AND/OR AUDIBLE SIGNAL IS EMITTED DURING THE WHOLE TRAVEL OF THE BIN LIFT.

LOADERS SHOULD BE MANUAL IN OPERATION AND NOT HAVE AN AUTOMATIC CYCLE, UNLESS THE LOADER IS PROTECTED BY SAFETY FENCING/GUARDING ON ALL SIDES WITH A SAFETY SWITCHED ELECTRICALLY INTERLOCKED GATE FOR ACCESS.

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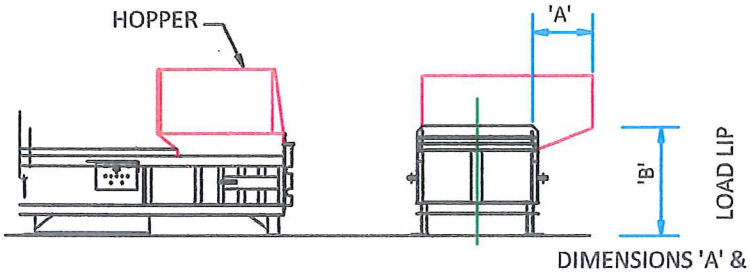
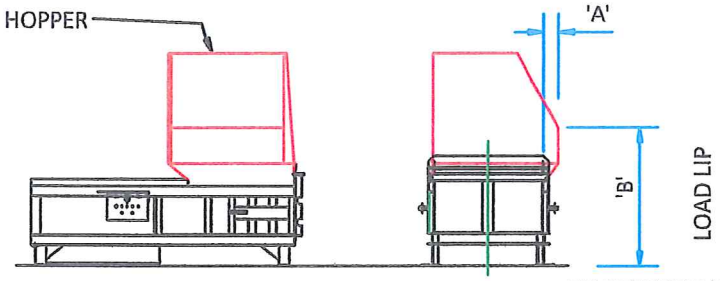
FIGURE 1.



OPEN HOPPER, HAND LOADING

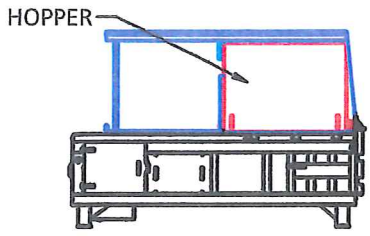
DIMENSIONS 'A' & 'B' TO CONFORM TO SAFETY HEIGHT & REACH REQUIREMENTS OF BS EN ISO 13857:2008



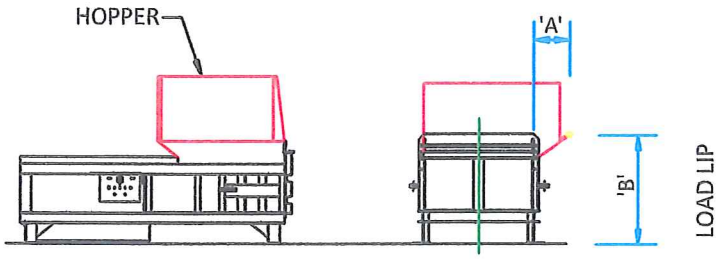
OPEN HOPPER, FORK TRUCK LOADING

DIMENSIONS 'A' & 'B' TO CONFORM TO SAFETY HEIGHT & REACH REQUIREMENTS OF BS EN ISO 13857:2008

FIGURE 2.



ENCLOSED HOPPER WITH SAFETY SWITCHED SLIDING DOOR

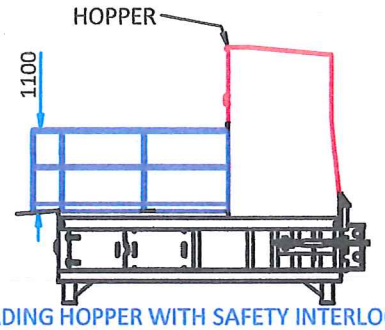


OPEN HOPPER WITH SWITCHED PUSH/TRIP BAR

DIMENSIONS 'A' & 'B' TO CONFORM TO SAFETY HEIGHT & REACH REQUIREMENTS OF BS EN ISO 13857:2008

FIGURE 3.

GUARD (HAND) RAILS AND TOE PLATES CONFORM TO EN ISO 14122-3-2001*A1:2010



OFF DOCK REARLOADING HOPPER WITH SAFETY INTERLOCKED DOORS
OPEN THEN MUST COMPLY WITH HEIGHT & REACH OF BS EN ISO 13857:2008

FIGURE 4. SIDE & REARLOADER SAFETY FENCES

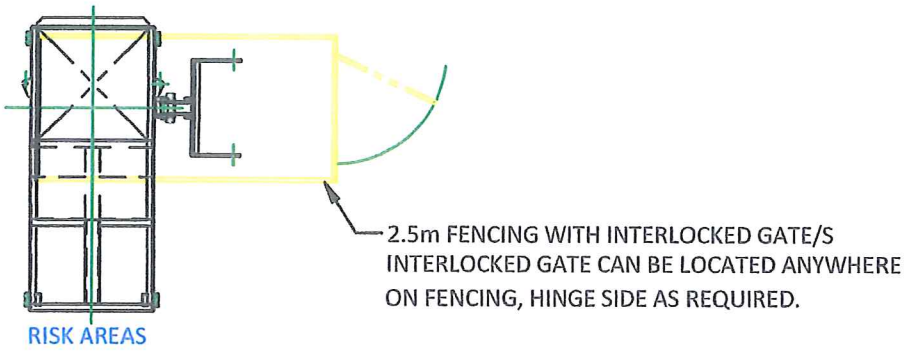


FIGURE 5. FEED CHUTE

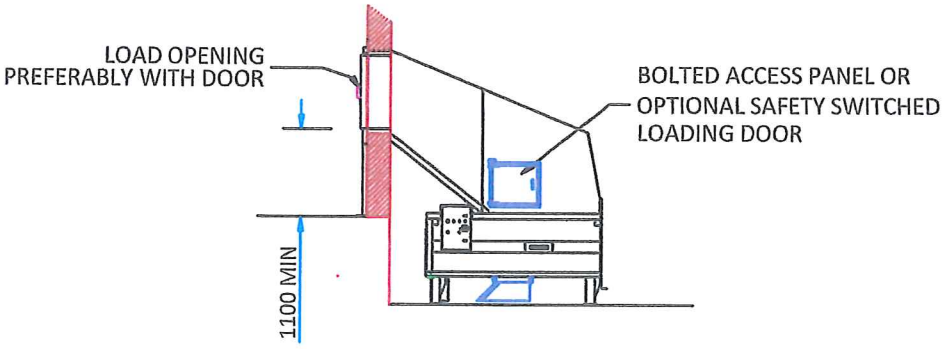
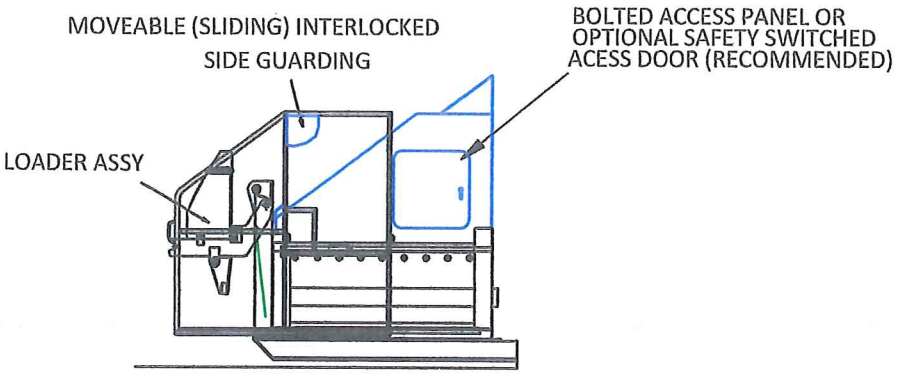


FIGURE 6. HOOK LIFT PORTABLE COMPACTOR WITH LOADER



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